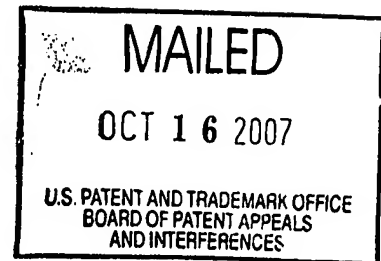


1 RECORD OF ORAL HEARING
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3 UNITED STATES PATENT AND TRADEMARK OFFICE
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5
6 BEFORE THE BOARD OF PATENT APPEALS
7 AND INTERFERENCES
8

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10 *Ex parte* ANDREW MARK NIGHTINGALE
11 and
12 ALISTAIR CRONE BRUCE
13

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15 Appeal 2007-2701
16 Application 10/079,811
17 Technology Center 2100
18



19
20 Oral Hearing Held: September 12, 2007
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23 Before ANITA PELLMAN GROSS, JOSEPH F. RUGGIERO, and
24 ST. JOHN COURTENAY, III, *Administrative Patent Judges*.
25

26 ON BEHALF OF THE APPELLANTS:
27

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35 The above-entitled matter came on for hearing on Wednesday,
36 September 12, 2007, commencing at 10:22 a.m., at The U.S. Patent and
37 Trademark Office, 600 Dulany Street, Alexandria, Virginia, before Laurel P.
38 Platt, RDR, CCR No. 0313203, Notary Public.

1 THE CLERK: Appeal number 2007-2701.

2 JUDGE GROSS: Good morning.

3 MR. SPOONER: Good morning. Stanley Spooner for Arm Limited
4 Computer Design Company in the UK.

5 The issue and the invention is with respect to computer chip designs
6 and being able to test both software and hardware on a design. Normally
7 you couldn't do that until you had actually come up with the software and
8 then put the software on a field programmable gate array, some hardware,
9 and then you would actually test that design on that chip.

10 JUDGE COURTENAY: Can you tell me what an IT block is?

11 MR. SPOONER: Excuse me?

12 JUDGE COURTENAY: Can you explain what an IT block is?

13 MR. SPOONER: Offhand, I can't.

14 JUDGE COURTENAY: Well, it's on page 2 of your specification and
15 also page 3.

16 MR. SPOONER: Let me look there then.

17 I can't help you. It's not something that's on the tip of my tongue.

18 JUDGE COURTENAY: I was hoping you might be able to enlighten
19 me on that, but go ahead.

20 MR. SPOONER: Okay. So the conventional way to test these was
21 the same way in which Hollander tests these. They basically take the entire
22 device under test, provide inputs to it and then have a predicted output. And
23 that's how they simulate it.

24 A better way to test it is what Arm has come up with. And if I can use
25 the analogy of an automobile, if you're going to simulate an automobile, you
26 might have the driver input which could be steering, brakes, and accelerator
27 or the pedal. And they would all go into components of the car.

1 Then those components would have an output that would affect what
2 the ultimate car does, whether it turns, how fast it goes, how fast it
3 decelerates. This would all be the device under test in the Hollander device.

4 What the current invention does, it still provides the steering, brakes,
5 pedal, but it also provides for interrelationships between these.

6 So that where the accelerator pedal will have an effect on the steering
7 -- for example, you're in a hard corner, and you give it a lot of gas. If it's a
8 rear-wheel drive car, the back end may slide out around you. This probably
9 happens when you are driving in the snow.

10 It doesn't happen in front-wheel drive cars because that just causes the
11 front wheel to understeer, to plow straight ahead.

12 But it's the interaction between these things that you also need to
13 include. And then you take your outputs to the overall device, and then it
14 works in whatever predicted manner you want.

15 And so Hollander is modeling a car by just modeling the inputs to and
16 the expected output from the device under test.

17 The claimed invention is modeling these separate things. If you will,
18 this one might be software. This one might be hardware. This one might be
19 hardware. At least one software, at least one hardware component. They
20 are modeled and their inner relationship is modeled, and that's what provides
21 the output, and that's why it's more accurate.

22 JUDGE COURTENAY: Can you point to the portion of your claim,
23 claim 1, for example, that brings that out?

24 MR. SPOONER: Sure. Claim 1, the first point is modeling operation
25 of the software component using a software simulator.

26 All right. That's probably done in Hollander, but the examiner
27 couldn't identify where, and where he pointed to doesn't. And of course,

1 item 2 is modeling the operation of the hardware component using a
2 hardware simulator.

3 JUDGE COURTENAY: On page 11 of your brief, you point to a
4 more pertinent portion. Are you conceding that limitation is taught by the
5 primary reference?

6 MR. SPOONER: Ask that again now? Page 11?

7 JUDGE COURTENAY: Yes. You just made a statement that
8 limitation Roman numeral (i) of claim 1 was probably done by the primary
9 reference. On page 11 when you say a more pertinent portion of the
10 Hollander reference is believed to be column 10, line 24, are you admitting
11 that limitation?

12 MR. SPOONER: No. I'm just saying that that portion of Hollander
13 may be more pertinent. But my position is that the examiner is under an
14 obligation to establish a prima facie case by showing where each of the
15 claimed elements exists in some prior art reference and then to provide some
16 reason for combining.

17 JUDGE COURTENAY: But didn't you just state that this limitation
18 (i) was probably done by the Hollander reference in your remarks here just a
19 moment ago?

20 MR. SPOONER: I just said that, yes. I said it's probably. But the
21 examiner hasn't identified where, and I don't know where.

22 JUDGE COURTENAY: So you are not admitting.

23 MR. SPOONER: No.

24 JUDGE COURTENAY: Okay. And you're not pointing to this
25 column 10 section.

1 MR. SPOONER: I'm saying that is believed to be more pertinent than
2 what the examiner recited, but I am not conceding that that is a modeling of
3 software.

4 JUDGE COURTENAY: Can you distinguish the more pertinent
5 portion in column 10 from your claim language?

6 MR. SPOONER: Hollander. All right. Hollander at 24 to 28,
7 column 10, says to perform code verification using the invention. The user
8 first creates a cycle-accurate model of the hardware apparatus on which the
9 external software program is to be run.

10 That says nothing about what is stated in item (i) of the claim which
11 says, quote, modeling operation of said software component using a
12 software simulator.

13 JUDGE COURTENAY: Okay. Your position is the reference is not
14 used with the software simulator?

15 MR. SPOONER: Absolutely.

16 JUDGE COURTENAY: Okay.

17 MR. SPOONER: All right. So continuing on, you asked about other
18 features that distinguish. We've picked up three of them. There may be
19 others. This is certainly not exclusive.

20 But item (iv), the generating with the test controller, certainly there is
21 generation that goes on, whether it's with a test controller and whether it
22 does the last bit in the claim, proceeds independently of said test controller.
23 In other words, that's the model interaction between the software component
24 and the hardware component.

25 We have repeatedly asked the examiner, tell us where this happens,
26 show us, identify it, and he's not done it.

1 The third one, item (vi), modeling the response of the hardware
2 component to the hardware stimulus. It may do that, but the last bit of that
3 section, it says: Wherein the software stimulus is passed to said software
4 simulator by issuing a remote procedure call from the test controller to the
5 software simulator.

6 That's a way in which you provide this software stimulus to the
7 software simulator.

8 And he's not pointed out -- he's admitted that Hollander doesn't teach
9 that. He suggests that Platt teaches it.

10 Now, Platt does use a call in there, but there's no indication that he's
11 using that call to provide software stimulus to a software simulator. It's just
12 not there.

13 So I mean those are three that we have -- three items that we have
14 identified with respect to the Hollander and Platt references. Hollander and
15 Platt are cited in combination for the three independent claims, 1, 15 and 16.

16 If that rejection is unsupported under Section 103, then the other
17 dependent claim rejections all fall. Our view is that the examiner has simply
18 failed to disclose any of those three components that we've identified.

19 Item (i), in his cited portion -- now, this is the modeling of operation
20 of a software component using a software simulator. He cites column 8,
21 lines 39 to 44. That's a reporting function, that portion of Hollander.

22 He suggests that column 10, lines 51 to 58 discloses that. There's
23 nothing to do with modeling there.

24 So how he concludes that discloses the claim language of modeling
25 operation of said software component using a software simulator, we don't
26 know. And we've asked him repeatedly in amendments, in the preappeal
27 brief supporting statement, in the appeal brief, and in the reply brief.

1 Item (iv), the issue of the generating step where the modeled
2 interaction between the software component and the hardware component
3 proceeds independently of the test controller. That's not in Hollander. The
4 cited portion of Hollander, column 5, lines 21 to 24, and column 8, lines 24
5 to 32, have nothing to do with that step.

6 And thirdly -- I think I have mentioned it -- this remote procedure call,
7 that's step (vi), the modeling step. The issue there is this interrelationship. It
8 says software stimulus is passed to the software simulator by issuing a
9 remote procedure call. That's just the way in which the interaction occurs.

10 Again, positively recited, the examiner has referenced another prior
11 art reference, Platt, which talks about a call, but he doesn't identify what that
12 call is used for, how it relates to software stimulus, how it goes to a software
13 simulator. It's not there.

14 The important thing is while he suggests that Platt teaches that third
15 item that I've identified, item (vi), he doesn't allege or provide any evidence
16 to suggest that those missing elements are disclosed in any of the other cited
17 prior references. I think it's Campbell and Harmon.

18 So really we are just looking at those two references, Hollander and
19 Platt, to see if the claim subject matter is disclosed in there, in the
20 independent claims, and then more importantly, to see if there's some reason
21 to combine them.

22 Now, I'm not going to go into the misstatements in the examiner's
23 answer because I think we responded to those in the reply brief.

24 But he misquotes portions of the claim and then says that those
25 misquoted portions are disclosed in these prior references. But if you have
26 any question, please look at the reply brief because it debunks those theories.

27 We've asked him to point out how or why there would be any reason

1 to pick and choose bits from Hollander and Platt, assuming that they are
2 disclosed. Why would one do it? Neither one is directed to the problem that
3 we are solving, getting a more accurate representation of a simulation of a
4 design that involves both hardware and software. He doesn't respond to it.

5 He just says that because Platt teaches using a call to increase the
6 speed of the device, Platt's device, which doesn't relate to software
7 simulators or stimulus for software simulators, he says that it would be
8 obvious to combine that with Hollander if you wanted a faster device.

9 That's sort of like saying that it would be obvious to combine -- use
10 grease on anything if you wanted to make it faster, whether or not it makes
11 something faster. I mean it's just a non sequitur almost.

12 In his answer he doesn't really respond to the appeal brief, so it's
13 tough to rebut his arguments in the answer. I think we've covered most of
14 them.

15 The KSR case, everyone initially thought that that was going to be a
16 big change in how obviousness rejections are handled, but there's nothing
17 that changes the fact that the burden is on the examiner to establish the
18 prima facie case first. He's got to show where the bits are in a plurality of
19 references.

20 Margaret Focarino, who is the Deputy Commissioner for patent
21 operations, still says that it remains necessary for an examiner, quote, to
22 identify the reasons why a person of ordinary skill in the art would have
23 combined the prior art elements in the matter claimed.

24 It still exists. There's got to be some reason. Now, you may not have
25 to be able to point to a written reason somewhere, but there has to be
26 something as to why one would pick and choose bits and pieces and
27 combine them in a claimed manner. And he's not identified those.

1 So in summary, I just don't think he's made the prima facie case. He's
2 admitted a number of specifically claimed elements. He's not indicated that
3 the claims are indefinite or that he doesn't or one of ordinary skill in the art
4 wouldn't understand those.

5 The fact that I am not one of ordinary skill in the art, as evidenced by
6 my inability to answer your question on IP block; however, I suspect that
7 that is an item that is well known to those of ordinary skill in this art.

8 That issue has never come up before. And so clearly we could
9 address it if given the opportunity in prosecution to provide the appropriate
10 documentation.

11 So in summary, he's just not made the case. It's not supported under
12 current law, and it's not supported by the prior art.

13 Any other questions?

14 JUDGE COURTENAY: Thank you very much.

15 MR. SPOONER: Thank you for your attention. I appreciate it.

16 JUDGE GROSS: It's good to see you again, Mr. Spooner.

17 MR. SPOONER: It's nice to see you, Judge.

18 (Whereupon, the proceedings at 10:40 a.m. were concluded.)
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